



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,008	07/25/2003	Demetri Psaltis	G&C 176.3-US-UI	3703
22462	7590	11/02/2004	EXAMINER	
GATES & COOPER LLP HOWARD HUGHES CENTER 6701 CENTER DRIVE WEST, SUITE 1050 LOS ANGELES, CA 90045				AMARI, ALESSANDRO V
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AIC

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/627,008	PSALTIS, DEMETRI	
	<b>Examiner</b> Alessandro V. Amari	<b>Art Unit</b> 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.                                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

- 4) Claim(s) 1-21 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-21 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 25 July 2003 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### **Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### **Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7, 8-10 and 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Jannson et al US 5,221,957.

In regard to claims 1, 8 and 15, Jannson et al discloses (see for example, Figures 7, 9, 12, 22, 23, 25) a holographic filter (102, 114) or a method for filtering a spectra or an apparatus for filtering a spectra comprising multiple superpositioned holograms synthesize a filter shape with multiple peaks at specified positions; the filter shape matches a spectrum of a substance and the holographic filter is capable of being used to detect the substance as described in column 4, lines 1-27, column 6, lines 57-68, column 7, lines 1-68, column 8, lines 1-10, and 40-51, column 17, lines 39-60 and column 18, lines 17-40.

Regarding claims 2, 9 and 16, Jannson et al discloses that the multiple peaks have specified relative strengths and widths as described in column 6, lines 45-66, column 17, lines 39-60 and as shown in Figure 12.

Regarding claims 3, 10 and 17, Jannson et al discloses that the holographic filter is capable of detecting the substance by simultaneously detecting multiple peaks of the

spectrum of the substance as described in column 6, lines 45-66, column 17, lines 39-60 and column 18, lines 17-64.

Regarding claim 4, Jannson et al discloses that the multiple superpositioned holograms are recorded using multiple pairs of reference beams that are introduced in the volume holographic medium simultaneously as described in column 5, lines 58-68 and column 6, lines 1-44. It should be noted that claim 4 is considered a product-by-process claim and in product-by-process claims, "once a product appearing to be substantially identical is found and a 35 U.S.C. 102/103 rejection [is] made, the burden shifts to the applicant to show an unobvious difference." MPEP 2113. This rejection under 35 U.S.C. 102/103 is proper because the "patentability of a product does not depend on its method of production." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding claim 5, Jañnson et al discloses that the multiple superpositioned holograms are recorded using multiple pairs of reference beams that are introduced in the volume holographic medium sequentially as described in column 5, lines 58-68 and column 6, lines 1-44. It should be noted that claim 5 is considered a product by process claim and in product-by-process claims, "once a product appearing to be substantially identical is found and a 35 U.S.C. 102/103 rejection [is] made, the burden shifts to the applicant to show an unobvious difference." MPEP 2113. This rejection under 35 U.S.C. 102/103 is proper because the "patentability of a product does not depend on its method of production." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding claim 6, Jannson et al discloses that the sequential introduction provides a desired spectral filtering function for the spectrum of the substance; the spectrum of the substance is broken into a sequence of peaks of varying amplitude and width and a separate grating is recorded in the volume holographic medium for each of the peaks as described in column 6, lines 45-66, column 7, lines 57-68, column 8, lines 1-10, column 17, lines 39-60 and as shown in Figure 12.

Regarding claims 7, 14 and 21, Jannson et al discloses a spectroscopy apparatus configured to use the holographic filter to detect the substance as described in column 17, lines 39-60, column 18, lines 17-64 and as shown in Figures 22, 23 and 25.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jannson et al US 5,221,957 in view of Bowley et al US 6,538,775.

Regarding claims 11 and 18, Jannson et al teaches the invention as set forth above, however, regarding claims 11 and 18, Jannson et al does not teach that the recording step comprises simultaneously introducing multiple pairs of reference beams in the volume holographic medium.

Regarding claims 11 and 18, Bowley et al teaches (see Figures 2B, 3) that the recording step comprises simultaneously introducing multiple pairs of reference beams in the volume holographic medium as described in column 9, lines 27-35, column 10, lines 13-24 and column 13, lines 57-65.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the recording method of Bowley et al for the holographic filter of Jannson et al in order to provide for a more efficient way of recording the holograms.

5. Claims 12, 13, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jannson et al US 5,221,957 in view of Bowley et al US 6,538,775 and further in view of Ning US 5,198,911.

Regarding claims 12, 13, 19 and 20, Jannson et al teaches the invention as set forth above and regarding claims 13 and 20, Jannson et al teaches providing a desired spectral filtering function for the spectrum of the substance; breaking upon the spectrum of the substance into a sequence of peaks of varying amplitude and width and recording a separate grating in the volume holographic medium for each of the peaks as described in column 6, lines 45-66, column 7, lines 57-68, column 8, lines 1-10, column 17, lines 39-60 and as shown in Figure 12.

However, regarding claims 12 and 19, Jannson et al does not teach introducing multiple pairs of reference beams in the volume holographic medium.

Regarding claims 12 and 19, Bowley et al does teach introducing multiple pairs of reference beams as shown in Figures 3, 4 and as described in column 9, lines 54-67 and column 10, lines 1-4.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the recording method of Bowley et al for the holographic filter of Jannson et al in order to provide for a more efficient way of recording the holograms.

However, in further regard to claims 12 and 19, Jannson et al in view of Bowley et al does not teach sequential introduction of reference beams.

Regarding claims 12 and 19, Ning teaches that the recording step comprises sequentially of reference beams in the volume holographic medium as described in column 2, lines 60-68 and column 3, lines 1-6.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the sequential recording method of Ning for the holographic filter of Jannson et al in view of Bowley et al in order to provide for the flexibility of adjusting the exposure time for each hologram individually.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ingwall et al US 2002/0196486 teaches a holographic filter with multiple superimposed holograms as described in paragraph 0011.
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alessandro V. Amari whose telephone number is (571)

272-2306. The examiner can normally be reached on Monday-Friday 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ava 9/4  
26 October 2004

  
MARK A. ROBINSON  
PRIMARY EXAMINER